

REMARKS/ARGUMENTS

Claims 1-38 are pending in the application. The Examiner has rejected claims 1-38. Applicant respectfully requests reconsideration of claims 1-38.

The Examiner has rejected claims 20-38 under 35 U.S.C. § 112, first paragraph, as allegedly claiming apparatus comprising a network element comprising a single means and therefore being regarded as being of undue breadth. Applicant respectfully disagrees.

Regarding claims 20-38, Applicant notes the present application, including claims 20-38, which remain in the same form in which they were originally filed, was examined and a first Office action was issued. Applicant notes that not only were claims 20-38 not determined to be of undue breadth during that examination or in that first Office action, but also specific rejections based on prior art were alleged with respect to those claims in that Office action. Accordingly, Applicant submits claims 20-38 remain in compliance with 35 U.S.C. § 112, first paragraph.

Moreover, Applicant submits claims 20-38 do not recite a "means." Thus, Applicant submits the Examiner's analysis under MPEP § 2164.08(a) is inapplicable to claims 20-38. In the Examiner's Response to Arguments, the Examiner made the following bald assertion: "Rejecting claims under 35 U.S.C. 112, first paragraph, requires a means recitation (i.e., structure, component), but not specifically the claim language 'means for' or 'step for.'" The Examiner states no basis for such assertion. Applicant can find no such "requirement" in, for example, MPEP § 706.03(c) "Rejections Under 35 U.S.C. 112, First Paragraph." Thus, Applicant submits the Examiner has not substantiated the rationale upon which the rejection is apparently based. Therefore, Applicant submits claims 20-38 are in condition for allowance.

In the Examiner's Response to Arguments, the Examiner states as follows:

16. Applicant's arguments filed February 27, 2009 regarding rejection of Claims 20-38 under 35 U.S.C. 112, first paragraph, have been fully considered but they are not persuasive. Applicant states that the claim does not recite "means for" and therefore does not invoke 35 U.S.C. 112, sixth paragraph. However, Examiner is not attempting to invoke 35 U.S.C. 112, sixth paragraph, in order to determine the metes and bounds of said rejected claims. Rejecting claims under 35 U.S.C. 112, first paragraph, requires a single means recitation (i.e., structure, component), but not specifically the claim language "means for" or "step for" as described in MPEP 2164.08(a). In the instant application, the means recitation is the claimed "network element," which does not appear in

combination with another recited element of means (i.e., another structural element or component). Therefore, rejection of Claims 20-38 under 35 U.S.C. 112, first paragraph, is maintained.

Applicant submits "network element" does not recite "means for." Thus, Applicant submits the Examiner's rejection of claims 20-38 under 35 U.S.C. 112, first paragraph, is malapropos. Therefore, Applicant submits claims 20-28 are in condition for allowance.

The Examiner has rejected claims 4-16 and 23-36 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite to failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant respectfully disagrees.

Regarding claims 4-16 and 23-36, Applicant notes the present application, including claims 4-16 and 23-36, which remain in the same form in which they were originally filed, was examined and a first Office action was issued. Applicant notes that not only were claims 4-16 and 23-36 not determined to be indefinite during that examination or in that first Office action, but also specific rejections based on prior art were alleged with respect to those claims in that Office action. Accordingly, Applicant submits claims 4-16 and 23-36 remain in compliance with 35 U.S.C. § 112, second paragraph. Therefore, Applicant submits claims 4-16 and 23-36 are in condition for allowance.

Moreover, Applicant submits the Examiner mischaracterizes what claims 4-16 and 23-36 actually recite in bringing the rejection. While the Examiner states, "The claim language cites a method step and apparatus functionality of "applying interface groups," Applicant notes claims 4 and 23 recite "applying interface groups to determine when marking of control packets is to be done" and claims that depend therefrom also recite subject matter beyond what the Examiner alleges. Thus, Applicant submits the actual claim language is not indefinite for failing to particularly point out and distinctly claim patentable subject matter. Therefore, Applicant submits claims 4-16 and 23-36 are in condition for allowance.

In the Examiner's Response to Arguments, the Examiner does not explain how, under "compact prosecution," claims 4-16 and 23-36 were apparently understood by the Examiner to particularly point out and distinctly claim subject matter during initial examination and preparation of the first Office action, but now, without intervening amendment, those same claims allegedly are not so understood. Thus, Applicant submits claims 4-16 and 23-36 are in condition for allowance.

In the Examiner's Response to Arguments, the Examiner states as follows:

17. Applicant's arguments filed February 27, 2009 regarding rejection of Claims 4-16 and 23-36 under 35 U.S.C. 112, second paragraph, have been fully considered but they are not persuasive. Applicant states that Examiner mischaracterizes what claim 4-16 and 23-36 actually recite and that claims that depend from Claims 4 and 23 recite subject matter beyond what Examiner alleges. Examiner respectfully disagrees. The claim language "applying interface groups" is not clearly defined in the specification. Despite the claims at issue reciting alleged results of the aforementioned functionality, it is unclear what the step of "applying interface groups" comprises. In order to further prosecution, Examiner has given said claim language its broadest reasonable interpretation in view of the specification, as set forth in the rejection above. Rejection of said claims under 35 U.S.C. 112, second paragraph, is maintained.

Applicant notes claims 4 and 23 recite "applying interface groups to determine when marking of control packets is to be done," not just the "applying interface groups" upon which the Examiner bases the rejection. Therefore, when each claim as a whole is given its broadest reasonable meaning, Applicant submits the Examiner's rejection is malapropos. Therefore, Applicant submits claims 4-16 and 23-36 are in condition for allowance.

The Examiner has rejected claims 1, 2, 17, 20, 21 and 36 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent No. 7,046,680) in view of Henderson et al. (U.S. Patent Publication No. US 2003/0152078 A1). Applicant respectfully disagrees.

Regarding claims 1 and 20, Applicant has amended claims 1 and 20. Applicant submits no new matter has been added. Applicant submits support for the amendments can be found, for example, in paragraph [0027] of the specification.

Applicant submits the cited portions of the cited references do not render obvious the subject matter of claims 1 and 20. Regarding claims 1 and 20, Applicant submits the cited portions of the cited references do not render obvious the subject matter of claims 1 and 20. As an example, Applicant submits the cited portions of the cited references do not disclose or suggest "marking packets carrying the Layer-3 control information." While the Examiner cites "column 7, line 58-column 8, line 4)" of the McDysan reference as allegedly disclosing "a marker/policer 82 that marks a packet by setting bits in a DiffServ Type of Service (TOS) byte in an IP packet header," Applicant submits such teaching does not disclose "Layer-3 control information" or "marking packets carrying the Layer-3 control information." While the Examiner alleges "which is known by one of ordinary skill in the art to comprise Layer-3 control information, Applicant submits the Examiner cites no teaching in the prior art to support such assertion. Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 1 and 20.

As another example, Applicant submits the cited portions of the cited references do not disclose or suggest "encapsulating the packets at Layer-2." While the Examiner cites the Henderson et al. reference, alleging "Henderson discloses a MAC (i.e., Layer 2) header representing the outermost encapsulation of an IP packet (paragraph 0094)," Applicant submits such teaching does not disclose "encapsulating the packets at Layer-2," where the antecedent basis for "the packets" is "packets carrying the Layer-3 control information." Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 1 and 20. Therefore, Applicant submits claims 1 and 20 are in condition for allowance.

In the Examiner's Response to Arguments, the Examiner states as follows:

Regarding Claims 1 and 20, Applicant states that the cited portions of the cited references do not disclose or suggest "marking packets carrying the Layer-3 control information" or "encapsulating the packets at Layer-2." Examiner respectfully disagrees. Examiner submits that the terms of art "Layer-3" and "Layer-2" refer to layers within the OSI 7-Layer Reference Model, which is a conceptual framework used in the art to model data communications between computers (see *The OSI Reference Model*, page 6, as background). Layer-3 in the OSI7-Layer Reference Model is the Network Layer, which defines network addresses and defines a logical network layout (see *The OSI Reference Model*, page 3, as background). A known Network Layer implementation is Internet Protocol (IP) (see *The OSI Reference Model*, page 3, as background). With regards to the claim limitation "marking packets carrying the Layer-3 control information," McDysan discloses a marker/policer that marks a packet by setting bits in a DiffServ Type of Service (TOS) byte in an IP packet header (column 7, line 58-column 8, line 4). As IP is known in the art to represent a real-world implementation of the OSI 7-Layer Reference Model, McDysan therefore discloses marking packets comprising Layer-3 control information (i.e., a TOS byte). Returning to the OSI7-Layer Reference Model, Layer-2 in the model is the Data Link Layer, which provides physical addressing, as opposed to the network addressing in Layer-3 (see *The OSI Reference Model*, pages 3-4, as background). The Data Link Layer is subdivided into two sublayers: Logical Link Control and Media Access Control (MAC) (see *The OSI Reference Model*, pages 3-4, as background). With regards to the claim limitation "encapsulating the packets at Layer-2," Henderson discloses a MAC (i.e., Layer 2) header representing the outermost encapsulation of an IP packet (paragraph 0094).

Applicant submits the Examiner appears to allege, without explanation, "a TOS byte" as supposedly disclosing "Layer-3 control information." Thus, Applicant submits claim 1 and 20 are in condition for allowance.

Regarding claims 2 and 21, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 2 and 21. Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 2 and 21. As an example, Applicant submits the cited portions of the cited references fail to disclose or suggest "marking the packets using a unique protocol identifier." While the Examiner states, "MyDysan discloses setting a DiffServ TOS

byte in an IP packet header, as described with regards to Claim 1 above, therefore equivalent to Applicant's claimed functionality of marking the packets using a unique protocol identifier," Applicant submits such teaching fails to disclose or suggest "a unique protocol identifier." Also, Applicant submits the Examiner has not alleged any motivation to combine any purported teaching in the prior art as to "a unique protocol identifier." Even in the Examiner's Response to Arguments, the Examiner states, "However, given its broadest reasonable interpretation in view of the specification, a DiffServ TOS byte would be known to one of ordinary skill in the art to comprise a unique identifier in an Internet Protocol (IP) network," but the Examiner still doesn't appear to allege any teaching as to "a unique protocol identifier." Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 2 and 21. Therefore, Applicant submits claims 2 and 21 are in condition for allowance.

In the Examiner's Response to Arguments, the Examiner states as follows:

Regarding Claims 2 and 21, Applicant states that the DiffServ TOS byte in an IP packet header disclosed in McDysan fails to disclose or suggest the claim limitation of a "unique protocol identifier." Examiner respectfully disagrees. The claim limitation "unique protocol identifier" is broad and does not explicitly or inherently define what is unique about the protocol identifier (i.e., a feature in or about the protocol identifier is differentiated from another protocol identifier). Examiner has therefore given said limitation its broadest reasonable interpretation in view of the specification. A DiffServ TOS byte is known in the art to comprise 5 unique values that indicate how an IP packet should be treated (see RFC 1349, page 4, as background).

As noted above, Applicant submits the Examiner alleges "a Diff Serv TOS byte would be known to one of ordinary skill in the art to comprise a unique identifier in an Internet Protocol (IP) network," but does not allege the DiffServ TOS byte to disclose a "unique protocol identifier." Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 2 and 21. Therefore, Applicant submits claims 2 and 21 are in condition for allowance.

Regarding claims 17 and 36, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 17 and 36. As an example, Applicant submits the cited portions of the cited references fail to disclose or suggest "encapsulating the packets according to control encapsulation." Applicant notes the Examiner acknowledges "McDysan does not expressly disclose encapsulating the packets according to control encapsulation." Moreover, Applicant notes the Examiner does not appear to allege any further teachings with respect to "control encapsulation" based on the Henderson et al. reference. Thus, Applicant submits the Examiner has not made a *prima facie*

showing of obviousness with respect to claims 17 and 36. Therefore, Applicant submits claims 17 and 36 are in condition for allowance.

In the Examiner's Response to Arguments, the Examiner states as follows:

Regarding Claims 17 and 36, Applicant states that the cited portions of the cited references fail to disclose or suggest "encapsulating the packets according to control encapsulation." Examiner respectfully disagrees. Given its broadest reasonable interpretation, Examiner submits that an encapsulation scheme utilized in accordance with packet/network/communication control reads on the claimed "control encapsulation." As such, the Media Access Control encapsulation disclosed by Henderson described above reads on the claim limitation, as the Layer-2 in the OSI 7-Layer Reference Model controls physical addressing in data communications.

Applicant submits "an encapsulation scheme" does not disclose "control encapsulation." Thus, Applicant submits claims 17 and 36 are in condition for allowance.

Regarding claims 3 and 22, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 3 and 22. As an example, Applicant submits the cited portions of the cited references fail to disclose or suggest "marking the packets using a link-local MPLS label." While the Examiner cites "(paragraphs 0065 and 0066)" of the Nakamichi reference, Applicant notes "(paragraphs 0065 and 0066)" of the Nakamichi refer to "the opaque LSA." Applicant further notes paragraph [0050] of the Nakamichi reference states, "...an opaque LSA (Link State Advertisement) that is a peculiar LSA in OSPF (Open Shortest Path First) protocol is used." Applicant submits the Examiner does not allege motivation as to why one of ordinary skill in the art at the time the invention was made would purportedly combine of teaching as such a "peculiar LSA in OSPF" with other alleged teachings.

Furthermore, in the Examiner's Response to Arguments, the Examiner states, "Examiner notes that the Nakamichi reference is a translation of a Japanese document and the term 'peculiar' may have a different meaning than that interpreted by Applicant." However, Applicant submits the Examiner has not provided any evidence to establish what the meaning of the terms in the Nakamichi reference would have been to one of ordinary skill in the art at the time of the invention or that one of ordinary skill in the art would have had, at the time of the invention, the understanding of those terms asserted by the Examiner. While the Examiner states, "the passage cited by Applicant is not relied upon to reject claims 3 and 22," Applicant submits the passage cited does exist in the cited reference and would have had bearing on how one of ordinary skill in the art would have understood the teachings of the

cited reference. Accordingly, Applicant submits such the Examiner cannot simply ignore the extent to which the teachings of the Nakamichi reference teach away from the subject matter of claims 3 and 22. Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 3 and 22. Therefore, Applicant submits claims 3 and 22 are in condition for allowance.

In the Examiner's Response to Arguments, the Examiner states as follows:

Regarding Claims 3 and 22, Applicant states that the cited portions of the cited references fail to disclose or suggest "marking the packets using a link-local MPLS label." Examiner respectfully disagrees. Paragraphs 0065 and 0066 of Nakamichi expressly discloses a link-state advertisement (LSA) comprising a "link state type" which, when set to a value of "9", indicates that the LSA is "link-local." Regarding Applicant's argument that that no motivation is alleged to combine the link-local MPLS label disclosed in Nakamichi with the marking and encapsulation disclosed by the combination of McDysan and Henderson, Examiner submits that a motivation was provided in the Office Action mailed November 24, 2008: "It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the link state advertisement disclosed in Nakamichi with the marker/policer disclosed in McDysan, as modified above, in order to allow a node in a communications network to collect traffic information and perform load sharing depending on traffic conditions" (further see paragraphs 0003 and 0012 of Nakamichi).

Applicant submits the motivation "to collect traffic information and perform load sharing depending on traffic conditions" teaches away from the subject matter of claims 3 and 22. Thus, Applicant submits claims 3 and 22 are in condition for allowance.

The Examiner has rejected claims 4-12 and 23-31 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent No. 7,046,680) in view of Henderson et al. (U.S. Patent Publication No. US 2003/0152078 A1) as applied to claims 1 and 20 above, and further in view of Yu et al. (United States Patent Application Publication US 2004/0010583 A1). Applicant respectfully disagrees.

Regarding claims 4 and 23, Applicant submits the cited portions of the cited reference fail to render obvious the subject matter of claims 4 and 23. As an example, Applicant submits the cited portions of the cited references fail to disclose or suggest "applying interface groups to determine when marking of control packets is to be done." While the Examiner cites "(paragraph 0022)" and "(paragraph 0025)" of the Yu reference, Applicant submits the cited portion of the Yu reference teaches away from the subject matter of claims 4 and 23. Applicant notes "(paragraph 0022)" begins "An Interface Group is a group of interfaces selected by the network manager to collectively define

when one or more network device should perform failover," which Applicant submits fails to disclose or suggest "applying interface groups to determine when marking of control packets is to be done." Applicant also notes "(paragraph 0025)" begins "The network device manager may assign a name to the interface group to enable the interface group to be referenced at a later time," which Applicant submits fails to disclose or suggest "applying interface groups to determine when marking of control packets is to be done." Therefore, Applicant submits claims 4 and 23 are in condition for allowance.

In the Examiner's Response to Arguments, the Examiner states as follows:

Regarding Claims 4-12 and 23-31, Applicant states that the cited art fails to disclose or suggest "applying interface groups" to enable various results. However, as stated above, the claim language "applying interface groups" is not clearly defined in the specification. Despite the claims at issue reciting alleged results of the aforementioned functionality, it is unclear what the step of "applying interface groups" actually comprises. In order to further prosecution, Examiner has given said claim language its broadest reasonable interpretation in view of the specification to comprise assignment of an interface for communications, as set forth in the rejection of Claims 4-16 and 23-36 under 35 U.S.C. 112, second paragraph, above. Accordingly, Yu discloses assigning interfaces to communicate within and between various types of networks (see Figures 1 and 4 and paragraphs 0022 and 0025). Further regarding Claims 5 and 24, Yu discloses packet communications between interfaces 'a' and 'd' of Network Device A in Figure 1. Further regarding Claims 6 and 25, Yu discloses communications between the Network Device A and the Internet (i.e., backbone given its broadest reasonable interpretation) (Figure 4). Further regarding Claims 7 and 26, Yu discloses communications with a Host PC (i.e., customer-specific interface group given its broadest reasonable interpretation) in Figure 4 using interface 'a' in Network Device A. Further regarding 8 and 27, Yu discloses communications between Network Device A and Network Device B (i.e., peer devices on a LAN given its broadest reasonable interpretation) via interfaces 'a' and 'b.' Further regarding Claims 9-12 and 28-31, Yu discloses communications between the Internet (i.e., backbone given its broadest reasonable interpretation) the Host PC (i.e., customer-specific interface group given its broadest reasonable interpretation), Network Device A and Network Device B (i.e., peer devices on a LAN given its broadest reasonable interpretation) via interfaces 'a' and 'd' in Network Device A and interfaces 'b' and 'e' in Network Device B in Figure 4.

Again, Applicant notes such claims do not merely recite "applying interface groups," as alleged by the Examiner, but additional claim language which the Examiner appears to ignore. Therefore, when each claim as a whole is given its broadest reasonable meaning, Applicant submits the Examiner's rejection is malapropos. Therefore, Applicant submits claims 4-12 and 23-31 are in condition for allowance.

Regarding claims 5 and 24, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 5 and 24. As an example, Applicant submits the cited portions of the cited references fail to disclose or suggest "applying interface groups to packet communications within a particular interface group." While the Examiner cites "(Figure 1, interface

group defined between interfaces 'a' and 'd' within network device A)" of the Yu reference, Applicant submits "Figure 1" of the Yu reference fails to disclose "interface group defined between interfaces 'a' and 'd' within network device A," as alleged by the Examiner. Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to the subject matter of claims 5 and 24. Therefore, Applicant submits claims 5 and 24 are in condition for allowance.

Regarding claims 6 and 25, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 6 and 25. As an example, Applicant submits the cited portions of the cited references fail to disclose or suggest "applying interface groups to packet communications within a backbone interface group." While the Examiner cites "(Figure 4, static tunnel through Internet between network device A and network device B)," Applicant submits such alleged teaching does not teach or suggest, for example, "...within a backbone interface group" or even "...interface group." Therefore, Applicant submits claims 6 and 25 are in condition for allowance.

Regarding claims 7 and 26, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 7 and 26. As an example, Applicant submits the cited portions of the cited references fail to disclose or suggest "applying interface groups to packet communications within a customer-specific interface group." While the Examiner cites "(Figure 4, interface 'a' between network device A and HostPC)," Applicant submits such alleged teaching does not teach or suggest, for example, "...within a customer-specific interface group" or even "...interface group." Therefore, Applicant submits claims 7 and 26 are in condition for allowance.

Regarding claims 8 and 27, Applicant submits the cited portions of the cited references do not render obvious the subject matter of claims 8 and 27. As an example, Applicant submits the cited portions of the cited references do not teach or suggest "applying interface groups to packet communications within a peer interface group." While the Examiner cites "(Figure 4, static tunnel between network device A and network device D)" of the Yu reference, Applicant submits such alleged teaching does not teach or suggest, for example, "...within a peer interface group" or even "...interface group." Therefore, Applicant submits claims 8 and 27 are in condition for allowance.

Regarding claims 9-12 and 28-31, Applicant submits the cited portions of the cited references do not render obvious the subject matter of claims 9-12 and 28-31. As an example, Applicant submits the cited portions of the cited references do not teach or suggest "applying interface groups to packet

communications between interface groups." As another example, Applicant submits the cited portions of the cited references do not teach or suggest "applying interface groups to packet communications between backbone and customer-specific interface groups." As yet another example, Applicant submits the cited portions of the cited references do not teach or suggest "applying interface groups to packet communications between customer-specific and peer interface groups." As a further example, Applicant submits the cited portions of the cited references do not teach or suggest "applying interface groups to packet communications between backbone and peer interface groups." Applicant notes the Examiner merely alleges teaching as to "(Figure 4, connections between peer, backbone, and customer networks at network device A)" of the Yu reference. However, Applicant submits claims 9-12 and 28-31 recite specific features, not merely "connections between peer, backbone, and customer networks." Thus, Applicant submits the Examiner has not alleged teachings as to the subject matter of claims 9-12 and 28-31. Therefore, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 9-12 and 28-31. Moreover, Applicant note the Examiner merely alleges teaching as to "networks" not as to "interface groups." Thus, Applicant submits the Examiner has not alleged teachings as to the subject matter of claims 9-12 and 28-31. Therefore, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 9-12 and 28-31. Accordingly, Applicant submits claims 9-12 and 28-31 are in condition for allowance.

The Examiner has rejected claims 13 and 32 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent No. 7,046,680) in view of Henderson et al. (U.S. Patent Publication No. US 2003/0152078 A1) and Yu et al. (United States Patent Application Publication US 2004/0010583 A1) as applied to claims 4 and 23 above, and further in view of Chuah et al. (United States Patent Application Publication US 2004/0054924 A1). Applicant respectfully disagrees.

Regarding claims 13 and 32, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 13 and 32. As an example, Applicant submits the cited portions of the cited references do not disclose or suggest "applying interface groups to communication of ICMP packets." While the Examiner cites "(paragraph 0062)" of the Chuah reference, Applicant submits "ICMP trace-backs" does not teach or suggest "applying interface groups to communication of ICMP packets." Moreover, Applicant submits the Chuah reference teaches away from the subject matter of claims 13 and 32, as Applicant notes "(paragraph 0062)" of the Chuah reference refers, in the alternative, to "probabilistic marking of IP packets" and "intentional ICMP trace-backs."

Moreover, Applicant notes the Examiner states, "It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the ICMP trace-back disclosed in Chuah with the marker/policer disclosed in McDysan, as modified by Ho and Yu above, in order to detect and block IP packets involved in DDOS attacks." Applicant notes the Examiner has not alleged any modification "by Ho and Yu above." Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 13 and 32. Therefore, Applicant submits claims 13 and 32 are in condition for allowance.

In the Examiner's Response to Arguments, the Examiner states as follows:

Regarding Claims 13 and 32, Applicant states that the cited portions of the cited references fail to disclose or suggest "applying interface groups to communication of ICMP packets" and further states that the cited portion of Chuah teaches away from the claimed subject matter. Examiner respectfully disagrees. As stated above, the claim language "applying interface groups" is not clearly defined in the specification. Despite the claims at issue reciting alleged results of the aforementioned functionality, it is unclear what the step of "applying interface groups" actually comprises. In order to further prosecution, Examiner has given said claim language its broadest reasonable interpretation in view of the specification to comprise assignment of an interface for communications, as set forth in the rejection of Claims 4-16 and 23-36 under 35 U.S.C. 112, second paragraph, above. With regards to the claim limitation "applying interface groups to communication of ICMP packets," Examiner notes that Chuah is not relied upon to teach "applying interface groups," which is disclosed by Yu as described above. Rather, Chuah is relied upon to disclose the communication and marking of ICMP packets (paragraph 0062). Examiner further notes that all instances of the typographical error "as modified by Ho" have been corrected in this office action.

Applicant notes claims 5 and 32 recite "applying interface groups to communication of ICMP packets," not just the "applying interface groups" upon which the Examiner bases the rejection. Therefore, when each claim as a whole is given its broadest reasonable meaning, Applicant submits the Examiner's rejection is malapropos. Therefore, Applicant submits claims 5 and 32 are in condition for allowance.

The Examiner has rejected claims 14 and 33 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent No. 7,046,680) in view of Henderson et al. (U.S. Patent Publication No. US 2003/0152078 A1) and Yu et al. (United States Patent Application Publication US 2004/0010583 A1) as applied to claims 4 and 23 above, and further in view of Pan et al. (United States Patent 7,336,615). Applicant respectfully disagrees.

Regarding claims 14 and 33, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 14 and 33. As an example, Applicant submits the cited

portions of the cited references do not disclose or suggest "applying interface groups to communication of ping packets." While the Examiner cites "(column 14, lines 48-55)" of the Pan reference, Applicant submits the Examiner's characterization that "Pan discloses assigning predetermined port numbers to LSP ping messages" teaches away from what the Examiner alleges teaches "interface groups" in claims from which claims 14 and 33 depend. Thus, Applicant submits the Examiner's alleged combination would be rendered inoperable.

Moreover, Applicant notes the Examiner states, "It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine ping message port assignment disclosed in Pan with the marker/policer disclosed in McDysan, as modified by Ho and Yu above, in order to automatically detect the status of a label switched path." Applicant notes the Examiner has not alleged any modification "by Ho and Yu above." Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 14 and 33. Therefore, Applicant submits claims 14 and 33 are in condition for allowance.

In the Examiner's Response to Arguments, the Examiner states as follows:

Regarding Claims 14 and 33, Applicant states that the cited portions of the cited references fail to disclose or suggest "applying interface groups to communication of ping packets" and further states that the cited portion of Pan teaches away from the claimed subject matter. Examiner respectfully disagrees. As stated above, the claim language "applying interface groups" is not clearly defined in the specification. Despite the claims at issue reciting alleged results of the aforementioned functionality, it is unclear what the step of "applying interface groups" actually comprises. In order to further prosecution, Examiner has given said claim language its broadest reasonable interpretation in view of the specification to comprise assignment of an interface for communications, as set forth in the rejection of Claims 4-16 and 23-36 under 35 U.S.C. 112, second paragraph, above. With regards to the claim limitation "applying interface groups to communication of ping packets," Pan discloses assigning predetermined port numbers to LSP ping messages (column 14, lines 48-55). The interpretation of "applying interface groups" applied in Claims 14 and 33 does not deviate from the interpretation applied to Claims 4 and 23, on which Claims 14 and 33 depend. Specifically, the interpretation is not limited with regards to a type of interface being assigned (e.g., virtual, physical, etc.). Therefore, Applicant's statement that the combination would be rendered inoperable is not persuasive.

Applicant notes claims 14 and 33 recite "applying interface groups to communication of ping packets," not just the "applying interface groups" upon which the Examiner bases the rejection. Therefore, when each claim as a whole is given its broadest reasonable meaning, Applicant submits the Examiner's rejection is malapropos. Therefore, Applicant submits claims 14 and 33 are in condition for allowance.

The Examiner has rejected claims 15 and 34 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent No. 7,046,680) in view of Henderson et al. (U.S. Patent Publication No. US 2003/0152078 A1) and Yu et al. (United States Patent Application Publication US 2004/0010583 A1) as applied to claims 4 and 23 above, and further in view of Fotedar et al. (United States Patent Application Publication 2004/0085965 A1). Applicant respectfully disagrees.

Regarding claims 15 and 34, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 15 and 34. As an example, Applicant submits the cited portions of the cited references do not disclose or suggest "applying interface groups to communication of traceroute packets." While the Examiner cites "(paragraph 0011)" of the Fotedar reference, Applicant submits the Examiner's characterization that "Fotedar discloses assignment of traceroute packets to a virtual router address indicative of a loopback interface" teaches away from what the Examiner alleges teaches "interface groups" in claims from which claims 15 and 34 depend. Thus, Applicant submits the Examiner's alleged combination would be rendered inoperable. In the Examiner's Response to Arguments, the Examiner states, "Applicant states that the cited combinations would be inoperable, but fails to provide further evidence." Applicant notes Applicant has cited the Examiner's characterization of the cited art with respect to claims 15 and 34 vis-à-vis the Examiner's characterization of the cited art with respect to claims from which claims 15 and 34 depend and has alleged such characterizations cannot be reconciled, and thus they teach away, rendering the Examiner's alleged combination inoperable.

In the Examiner's Response to Arguments, the Examiner states as follows:

Regarding Claims 15 and 34, Applicant states that the cited portions of the cited references fail to disclose or suggest "applying interface groups to communication of traceroute . packets" and further states that the cited portion of Potedar teaches away from the claimed subject matter. Examiner respectfully disagrees. As stated above, the claim language "applying interface groups" is not clearly defined in the specification. Despite the claims at issue reciting alleged results of the aforementioned functionality, it is unclear what the step of "app lying interface groups" actually comprises. In order to further prosecution, Examiner has given said claim language its broadest reasonable interpretation in view of the specification to comprise assignment of an interface for communications, as set forth in the rejection of Claims 4-16 and 23-36 under 35 U.S.C. 112, second paragraph, above. With regards to the claim limitation "applying interface groups to communication of traceroute packets," Fotedar discloses assignment of traceroute packets to a virtual router address indicative of a loop back interface (paragraph 0011). The interpretation of "applying interface groups" applied in Claims 14 and 33 does not deviate from the interpretation applied to Claims 4 and 23, on which Claims 15 and 34 depend. Specifically, the interpretation is not limited with regards to a type of interface being assigned (e.g., virtual, physical, etc.). Therefore, Applicant's statement that the combination would be rendered inoperable is not persuasive.

Applicant notes claims 15 and 34 recite "applying interface groups to communication of traceroute packets," not just the "applying interface groups" upon which the Examiner bases the rejection. Therefore, when each claim as a whole is given its broadest reasonable meaning, Applicant submits the Examiner's rejection is malapropos. Therefore, Applicant submits claims 15 and 34 are in condition for allowance.

The Examiner has rejected claims 18 and 37 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent No. 7,046,680) in view of Henderson et al. (U.S. Patent Publication No. US 2003/0152078 A1) as applied to claims 1 and 20 above, and further in view of Johansson (United States Patent 6,061,330). Applicant respectfully disagrees.

Regarding claims 18 and 37, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 18 and 37. As an example, Applicant submits the cited portions of the cited references do not disclose or suggest "receiving unmarked control packets using rate-limited queues." Applicant notes the Examiner cites "(Figure 1, 116; Figure 4, 410)" of the Johansson reference. Applicant sees no "Figure 4" in the Johansson reference, so Applicant assumes the Examiner is referring to "Figure 4a, 410." Applicant submits the Examiner mischaracterizes the teachings of the Johansson reference. As an example, Applicant notes the Johansson reference states, in col. 9, lines 41-43, "The flow diagram of FIG. 4a illustrates steps for calculating aggregated offered rate y_{tot} and queue length at the output device 224." Applicant submits "the output device 224" teaches away from "receiving unmarked control packets using rate-limited queues." Moreover, Applicant submits the Examiner has not alleged any relationship between "the output device 224" and "Figure 1, 116." Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 18 and 37. Therefore, Applicant submits claims 18 and 37 are in condition for allowance.

In the Examiner's Response to Arguments, the Examiner states as follows:

Regarding Claims 18 and 37, Applicant states that the cited portions of the cited references do not disclose or suggest "receiving unmarked control packets using rate-limited queues." Examiner respectfully disagrees. Figure 4a, step 410 of Johansson "determines when a predetermined number Input Rate Limit of Cells are received" (column 10, lines 45-47). As such, Johansson provides a general teaching of a rate-limited queue receiving packets. Examiner notes that the claim limitation does not require the rate-limited queue to be in an input or output device and further notes that the input and output device disclosed in Johansson represent a connection between an input and output port of a switch (column 3, lines 51-55).

While the Examiner cites "Figure 4a, step 410 of Johansson," Applicant submits the Examiner does not appear to allege teaching as to, for example, "...unmarked control packets...." Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 18 and 37. Therefore, Applicant submits claims 18 and 37 are in condition for allowance.

The Examiner has rejected claims 19 and 38 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent No. 7,046,680) in view of Henderson et al. (U.S. Patent Publication No. US 2003/0152078 A1) as applied to claims 1 and 20 above, and further in view of Hussey et al. (United States Patent Application Publication 2001/0049744 A1). Applicant respectfully disagrees.

Regarding claims 19 and 38, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 19 and 38. As an example, Applicant submits the cited portions of the cited references do not disclose or suggest "processing the received packets at a line rate." While the Examiner cites "(paragraph 0050)" of the Hussey reference, Applicant notes "(paragraph 0050)" of the Hussey reference does not specifically recite "a processor pool aggregation technique wherein a received packet data stream is capable of being processed at a line rate," but instead states "...receives a packet data stream via the communication network 110 at a line rate that might otherwise overwhelm the processing capabilities of the NIC 160 and result in dropped packets and reduced quality of service." Moreover, Applicant submits the Examiner has not presented any evidence that the purported combination of the teachings of Hussey and those of the other cited references would not also "otherwise overwhelm the processing capabilities of the NIC 160 and result in dropped packets and reduced quality of service." Accordingly, Applicant submits the Examiner's purported combination has not been shown to disclose or suggest the subject matter of claims 19 and 38. In the Examiner's Response to Arguments, the Examiner states, "Examiner notes that the passage of the Hussey reference cited by Applicant refers to the benefit disclosed in Hussey, rather than an admitted deficiency of the prior art." Applicant submits Hussey appears, in such passage, to be reciting a critical limitation that the Examiner presents no evidence would be met if supposed teachings of such passage were combined with the supposed teachings of the other cited references. Therefore, Applicant submits claims 19 and 38 are in condition for allowance.

In the Examiner's Response to Arguments, the Examiner states as follows:

Regarding Claims 19 and 38, Applicant states that the cited portions of the cited references do not disclose or suggest "processing the received packets at a line rate." Examiner respectfully disagrees. Hussey discloses a processor pool aggregation technique wherein a communication device "receives a packet data stream via the communication network ... at a line rate that might otherwise overwhelm the processing capabilities of the NIC ... and result in dropped packets and reduced quality of service" (paragraph 0050). The cited portion of Hussey provides a general teaching that a device receives a packet data stream at a line rate. Applicant's statement that no evidence is provided that the purported combination "would not otherwise overwhelm the processing capabilities of the NIC ... and result in dropped packets and reduced quality of service" is not material to the patentability of the claims under 35 U.S.C. 103(a). Hussey is in the same field of endeavor (i.e., data packet processing) as both McDysan and Henderson and therefore constitutes analogous art. Further, Hussey provides a motivation on the part of one of ordinary skill in the art to combine the general teaching of line-rate processing with the teachings of McDysan and Henderson. In that efficiency when processing data in a device and accessing data within said device needs to be improved by reducing frequent access to external memory (see paragraphs 0004 through 0006 of Hussey).

Applicant submits the Examiner alleges teaching as to "a device receives a packet data stream at a line rate." Applicant notes claims 19 and 38 do not recite "receiving the received packets at a line rate" but rather "receiving the packets as received packets;" and "processing the received packets at a line rate." Thus, Applicant submits the Examiner has failed to make a *prima facie* showing of obviousness with respect to the subject matter of claims 19 and 38. Therefore, Applicant submits claims 19 and 38 are in condition for allowance.

In conclusion, Applicant has overcome all of the Office's rejections, and early notice of allowance to this effect is earnestly solicited. If, for any reason, the Office is unable to allow the Application on the next Office Action, and believes a telephone interview would be helpful, the Examiner is respectfully requested to contact the undersigned attorney.

Respectfully submitted,

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Date



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